

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

UNITED STATES OF AMERICA

v.

HAOYANG YU

No. 19-cr-10195-WGY

**DEFENDANT HAOYANG YU'S
SENTENCING MEMORANDUM**

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TABLE OF CONTENTS

INTRODUCTION	1
BACKGROUND	3
A. Childhood and Education.....	3
B. Employment Before and After ADI.....	3
C. Family and Community Life.....	5
D. The Offense of Conviction.....	6
ARGUMENT	7
A. The Correctly-Calculated GSR is 0-6 Months (level 8, CHC I).....	8
B. The “Loss” Guideline, § 2B1.1, Yields an Excessive Advisory GSR.....	9
C. The Sentences in Other Trade Secret Prosecutions under 18 U.S.C. § 1832 Support a Sentence of “Time Served” for Mr. Yu.....	12
D. Just Punishment Does Not Require Further Incarceration.....	14
E. Neither Specific nor General Deterrence Requires Additional Incarceration.	16
F. Imprisonment Would Not Facilitate Any Required “Treatment.”	18
G. Any Fine Should Not Exceed \$5,000.	18
H. The Prosecution (and ADI) Have Waived Restitution.	19
CONCLUSION.....	21
CERTIFICATE OF SERVICE	21

To assist the Court with sentencing, Defendant, Haoyang Yu, respectfully submits this Memorandum and two exhibits: a corrected/annotated version of the prosecution's chart of sentences under 18 U.S.C. § 1832 (Exhibit A) and letters from family, colleagues, and friends (Exhibit B).¹

INTRODUCTION

Haoyang Yu is a devoted husband, father, and son. He has no criminal record. After coming to the United States as a graduate student more than 20 years ago, Mr. Yu built an honorable career as a talented engineer, working for a series of well-established and respectable companies. He also became a naturalized U.S. citizen and an active, respected member of his community in Lexington. Co-workers and friends alike describe Mr. Yu as a consistently professional, enthusiastic, helpful, and generous "team player."

Unfortunately, Mr. Yu also exercised very poor judgment. He did not turn "square corners" with his employer, Analog Devices Inc. ("ADI"). He should not have started Tricon while still working at ADI. He should not have taken or retained files and data from ADI. Whether or not various aspects of this conduct amounted to federal crimes, it was wrong. Mr. Yu recognizes that he is ultimately responsible for his choices and their consequences. He has nobody to blame but himself and deeply regrets his actions.

Mr. Yu understands that he stands before the Court adjudged guilty of a very serious offense. However, any sentence the Court imposes should also acknowledge that the jury rejected almost all of the prosecution's case, including all but one "trade secret" charge, all of the wire fraud and unlawful export charges, and the surviving immigration fraud charge (after this Court

¹ Home addresses and contact information, as well as the names of minor children, have been redacted from the publicly-filed letters. Counsel can provide unredacted copies upon request.

had entered a pre-verdict judgment of acquittal on a separate count that would have triggered automatic denaturalization). While the acquittals of Mr. Yu and eventual dismissal of the baseless indictment against his wife, Yanzhi Chen, arguably demonstrate that “the system worked,” that is cold comfort to the Yu family and their community, who endured years under the threat that both parents of U.S.-born children could face prison and deportation. The Court’s sentence should also account for the implicit bias that played at least some role in “selecting” Mr. Yu for this rare trade secret investigation and prosecution.

The six days Mr. Yu spent in pretrial detention at Wyatt Detention Facility opened his eyes and shattered his world. In the circumstances presented here, any sentence of additional incarceration for Mr. Yu would far exceed what is necessary to accomplish the purposes of sentencing. It would also create unwarranted disparity when compared with other federal trade secret prosecutions brought under 18 U.S.C. § 1832. *See* Ex. A. The debilitating consequences of a federal felony conviction, a term of supervised release, a reasonable fine, and the civil liability that Mr. Yu continues to face all supply ample punishment.

Accordingly, the Court should impose a sentence of “**time served**” (six days), a fine no greater than \$5,000, one year of supervised release,² and the mandatory \$100 special assessment.

² If the Court determines that some measure of additional punishment is necessary, it could also impose a term of electronically-monitored home confinement as a condition of supervised release. We would note, however, that Mr. Yu already spent more than 15 months of his pretrial detention on electronic monitoring with restrictive conditions.

BACKGROUND³

A. Childhood and Education

Mr. Yu is 44-years old. Born and raised in Harbin, China, Mr. Yu spent his childhood alone with his mother because his father traveled for work in remote areas during most of the year and could not communicate with the family. Relatively poor, the family lived in a small apartment with a kitchen, living room, and single bedroom. His basic needs were always met but he had no luxuries and, for example, had never eaten in a restaurant until he went to college.

Mr. Yu excelled in school, and in 2000, he earned a bachelor's degree in Engineering Physics from the prestigious Tsinghua University in Beijing. After coming to the United States in 2002, Mr. Yu earned a master's degree in Electrical and Computer Engineering from UMass Amherst in 2004.

B. Employment Before and After ADI

Mr. Yu worked for over 10 years at TriQuint Semiconductor (now Qorvo). Officials from the company told law enforcement that Mr. Yu was “well thought of at Qorvo and within th[e] community.” DOJ-YU-000174. A colleague, Sandra Zhang, recalled:

Haoyang joined TriQuint as an entry-level design engineer in my group in Jan 2004. He was a fast learner, very enthusiastic, and innovative. Haoyang worked hard and well with all our team members. He grew from an individual contributor to a respected Project Lead in just a few years. By the time I left the company in 2011, he had successfully led key projects, got one patent issued and one more patent pending, and was nominated as the “Member Technical Staff” for “Outstanding Achievement and Technical Contribution.” I still remember when Haoyang, another team member, and I were burning late-night oils to complete a Wi-Fi Front-end-module design and layout. He always tried to finish his portion earlier and help others at the end. As a result, we won the Tier 1 customer platform while competing with 13 other companies, and he received the “Extra Mile Award.”

Ex. B11.

³ The narrative in this section is a cursory synopsis based on more extensive social history contained in the PSR and accompanying letters.

From 2014-2017, Mr. Yu worked at ADI. From 2017 until his arrest in 2019, while establishing Tricon, Mr. Yu worked as Applications Engineer for Keysight Technologies, which creates and supports the industry-standard chip design software. In an interview with law enforcement, Mr. Yu's supervisor at Keysight "[r]eported that customers loved Yu." YU-009709. He "stated Yu came across 'as a boy scout employee,'" and he "thought Yu 'was one of the naturals' and expected him to do very well in the future." *Id.* Andy Howard, another colleague from Keysight, recalled: "I and other company applications engineers were very impressed with his technical capabilities, his enthusiasm, and the way he worked with customers. We were very shocked and disappointed to lose him as a member of our team." Ex. B14. Representatives of Raytheon, which Mr. Yu supported for Keysight, told law enforcement that he was "a very likable, hardworking, team player who is helpful and always solves the groups' problems." YU-006968.

After Mr. Yu was arrested and indicted, he was fired from Keysight and had to leave behind the promising chip-design career he had built over a decade. As the sole financial provider for his family, he searched relentlessly to find a new job, eventually landing a position as an entry-level research engineer at RMD, Inc., which develops instruments to detect radiation. He had to start from scratch, surrounded mostly by recent graduates. Mr. Yu's colleague, Chris Hart, recalled:

After spending his entire career designing microchips, Haoyang Yu initially entered the team as an entry level Electrical Engineer but quickly showed his talent and ability to pick things up quickly working his way to become a key part of the team.

....

I remember having a project that I was mainly responsible for and the deadline was quickly approaching. I was having trouble getting a part of it to work. My boss was not happy and the customer kept on emailing us on the status. It was a stressful time and I felt a constant knot in my stomach that week from the stress. Haoyang Yu offered to help me and stayed late with me to get my part working. When I needed the help he was there and put aside his projects and work and selflessly helped me complete my project. I don't know if our boss ever found out about that. It felt really great to have someone like him around.

Ex. B13. After the jury verdict in the case, Mr. Yu was let go from RMD.

C. Family and Community Life

Mr. Yu has been married to Yanzhi Chen for over 20 years, and they have two sons, aged 12 and 14. A family friend, Joe Dolci, summarized Mr. Yu's community involvement:

Haoyang has been an active member of the Lexington community since he moved here about a decade ago. He has volunteered his time and resources to various causes, including school activities, food pantries, and town events. He has also been a consistent supporter of the local youth sports teams. He was a soccer coach and assistant lacrosse coach before his legal case happened.

Ex. B07. Another friend, Brian Losier, described Mr. Yu's relationship with his sons and commitment to their participation in youth hockey:

I know Haoyang to be a VERY committed, supportive, and loving father to [REDACTED] and [REDACTED]. Haoyang is an absolute fixture at all [youth hockey] activities, be it practices, games or tournaments. My own kids play just about every sport possible, so I can say with confidence that there's not another youth sport that requires more time, commitment, and support (both emotional and financial) than hockey. Given the extreme amount of travel involved with the many games and tournaments and the fact that most players have other siblings also playing hockey, most parents work together to carpool wherever possible. However, Haoyang always finds a way to bring his boys himself. I believe that he knows how much his presence and support means to his boys and so just figures out a way to manage it all and be ever-present. He has been their rock and I can't imagine [REDACTED] and [REDACTED] being without him for any length of time, especially with the larger challenges of high school on the horizon.

Ex. B08. Ms. Chen described how Mr. Yu has occupied himself since the verdict:

Instead of giving up on himself, he started to study the bible, go to church, and volunteer in the Lexington community. He also devoted his time and engineering skills to helping people. Recently he invented KRKIT <https://www.krkit.us/about>, an ice hockey training device. The idea started when my older son took a hard hit from behind in a hockey game. . . . KRKIT helped our sons, and my husband brought it to our local hockey community to help more kids. To use the electrical device in hockey training is a new thing. My husband spent years watching kids playing hockey while he was thinking, testing, and inventing. I hope that when the case is behind us, he will have an opportunity to restart his career in this new field and hopefully will bring jobs to our community.

Ex. B01.

Finally, on December 26, 2022, Mr. Yu rescued a child who had fallen through ice while skating and was later honored by the Lexington Police Department, the very police force that had participated in the search of his home back in 2019.⁴



D. The Offense of Conviction

Mr. Yu was convicted of one count of unlawfully possessing a trade secret, specifically, an abandoned, poorly-performing prototype design to “translate” a legacy chip, the HMC1022, to be manufactured at a different foundry. ADI later released the “final” translation, after moving in “a different direction” through several iterations of further engineering work, as the HMC1022A. Mr. Yu sold 109 chips that were arguably derivative of that abandoned prototype design (Tricon’s TM5051 and TM5052), for which he grossed a grand total of \$12,437. Ex. 389A.

The Court should not be distracted by the prosecution’s extensive references in its Sentencing Memorandum to acquitted conduct nor its baseless suggestions that Mr. Yu and the offense of conviction somehow posed a national security threat.

⁴ See <https://lexobserver.org/2023/01/27/lexington-police-department-awards-haoyang-yu-certificate-of-recognition-for-heroism-at-old-reservoir/> and <https://lexobserver.org/2023/01/06/when-a-skater-fell-through-the-ice-at-the-old-reservoir-quick-thinking-and-a-dog-leash-saved-his-life/>

Like any MMIC (or, indeed, any screw or bolt), the HMC1022A can potentially be used in military applications. But Mr. Yu sold his TM5051 and TM5052 exclusively to domestic, civilian industry customers (because he understood those *chips* were export controlled), and the bulk of ADI's sales of the HMC1022A went to an electronic measurement instrument manufacturer (Anritsu Corporation) and wireless communication providers (*e.g.*, Ciao Wireless), not to defense contractors. Ex. 711.

The prosecution's repeated references to China in its Sentencing Memorandum are also misleading, at best. Mr. Yu did not export any controlled products to China. He ended his polite WeChat interactions with college friends by making clear he had no intention of leaving the United States. And there is nothing unsavory about legitimate trade with China that complies with export regulations. Indeed, ADI "recognizes that China is its fastest-growing market that accounts for more than 20 percent of its total sales, comparable to the European Market."⁵

ARGUMENT

A criminal penalty must be "sufficient, but not greater than necessary, to comply with the purposes of sentencing." 18 U.S.C. § 3553(a). Here, fair consideration of the offense, in light Mr. Yu's history and characteristics, establishes additional incarceration is unwarranted.

The Court is required to compute the Guideline Sentencing Range ("GSR") as a "starting point and the initial benchmark." *Gall v. United States*, 528 U.S. 38, 49 (2007). Although Probation states the advisory GSR is either 21-27 months (level 15, CHC I) (assuming \$45,000 "intended

⁵ "ADI Swears by Chinese Market," ChinaDaily.com (Jan 12, 2022), *available at* <https://global.chinadaily.com.cn/a/202201/12/WS61de2879a310cdd39bc80793.html>

loss”) or 41-51 months (level 22, CHC I) (assuming \$450,000 “intended loss”), Mr. Yu contends the properly calculated GSR is 0-6 months (level 8, CHC I).

Whatever GSR the Court adopts, the Guidelines are not the sole factor, nor even the first among the many factors, that Congress has commanded the courts to apply in § 3553(a). The Court “may not presume that the Guidelines range is reasonable,” rather it must “make an individualized assessment based on the facts presented” and “consider sentences other than imprisonment.” *Gall*, 528 U.S. at 59; *see Nelson v. United States*, 555 U.S. 350, 352 (2009) (per curiam) (“Guidelines are not only *not mandatory* on sentencing courts; they are also not to be *presumed* reasonable.”). In doing so, the Court must consider whether the Sentencing Commission’s underlying policy results in an advisory GSR that is unreasonably high. *See United States v. Kimbrough*, 552 U.S. 85, 109 (2007); *United States v. Boardman*, 528 F.3d 86, 87 (1st Cir. 2008); *United States v. Martin*, 520 F.3d 87, 93-94 (1st Cir. 2008).

Elaborating on the meaning and breadth of the “parsimony principle,” the First Circuit stressed that *Kimbrough* requires a “more holistic inquiry” and that “section 3553(a) is more than a laundry list of discrete sentencing factors; it is, rather, a tapestry of factors, through which runs the thread of an overarching principle.” *United States v. Rodriguez*, 527 F.3d 221, 228 (1st Cir. 2008). That overarching principle is to “impose a sentence sufficient but not greater than necessary” one that is “*minimally sufficient* to achieve the broad goals of sentencing.” *Id.* (emphasis added).

A. The Correctly-Calculated GSR is 0-6 Months (level 8, CHC I).

Mr. Yu agrees that the base offense level is 6, PSR ¶ 23, and that he is subject to a 2-level enhancement for abuse of a position of trust and/or use of special skill, PSR ¶ 27. However, he preserves his previously-litigated objection to the application of any enhancement for “intended

loss” under U.S.S.G. § 2B1.1, PSR ¶ 24,⁶ and he also objects to the application a 2-level enhancement for transmission of the “trade secret” outside the United States, PSR ¶ 25.

Regarding the latter enhancement, Mr. Yu did not transmit the prototype design for ADI’s HMC1022A outside the United States. Rather, he created two different designs of his own that, while bearing superficial resemblance to the ADI prototype, were substantially different and, most importantly, were created using a different, older foundry Process Design Kit, meaning that key components, in particular transistors, were different from those in the ADI design. Mr. Yu transmitted his designs to the Win foundry, a private corporation in Taiwan, to be manufactured and returned to the United States. Even if the enhancement technically applied, it makes no sense to apply it in these circumstances because Win operates under a strict non-disclosure agreement and does not share data with anyone. Moreover, ADI uses the same foundry in Taiwan to manufacture its chip, so Win already possessed any trade secrets associated with that product.

Accordingly, total offense level should be 8, which yields a GSR of 0-6 months (CHC I).

B. The “Loss” Guideline, § 2B1.1, Yields an Excessive Advisory GSR.

The proposed “loss” guideline in this case is a poor proxy for culpability and appropriate punishment. Indeed, the structure of the “loss” guideline, § 2B1.1, and the focus on financial loss to measure moral culpability has long been criticized by courts and commentators. As this Court observed, “market loss does not seem to the Court to be a terribly good indicator of culpability.” 2/14/23 Tr. at 31; *see also, e.g., United States v. Parris*, 573 F. Supp. 2d 744 (E.D.N.Y. 2008) (concluding loss guidelines “have run so amok that they are patently absurd on their face” and imposing sentence 25 years below guidelines); *United States v. Adelson*, 441 F. Supp. 2d 506, 509

⁶ Mr. Yu respectfully submits the Court’s finding of an “intended loss” between \$45,000 and \$450,000 was not supported by the evidence and insufficiently explained.

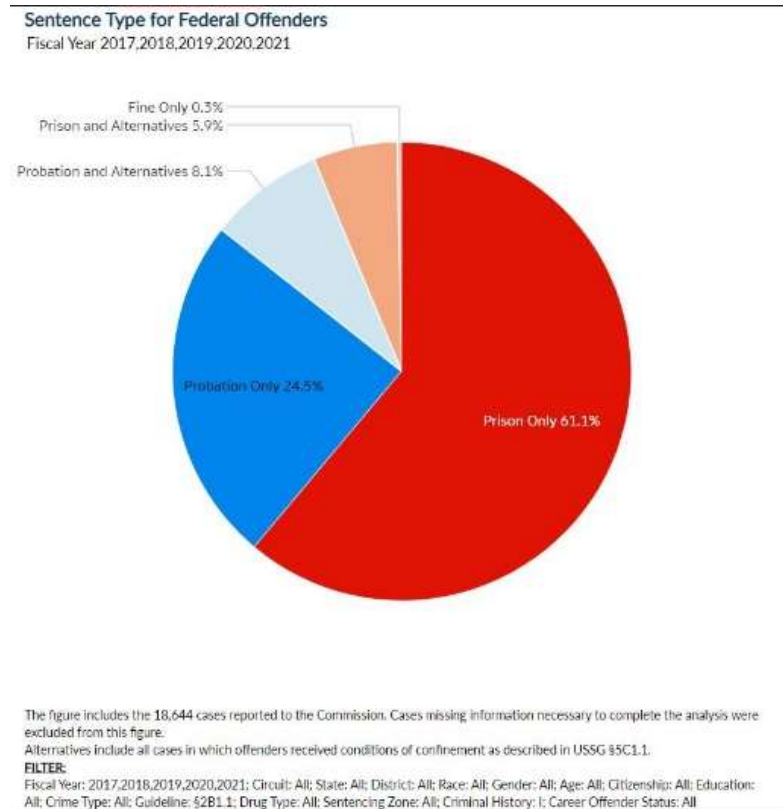
(S.D.N.Y. 2006) (criticizing “inordinate emphasis” on loss as measure of culpability unexplained by Sentencing Commission); *United States v. Ranum*, 353 F. Supp. 2d 984, 990 (E.D. Wis. 2005) (observing “[o]ne of the primary limitations of the guidelines, particularly in white-collar cases, is their mechanical correlation between loss and offense level”); *United States v. Emmenegger*, 329 F. Supp. 2d 416, 427-28 (S.D.N.Y. 2004) (recognizing “loss” guidelines “place undue weight on the amount of loss involved in the fraud,” which is “relatively weak indicator of the moral seriousness of the offense or the need for deterrence”).

The problem of high GSRs, with weak and unexplained correlations to the sentencing goals of § 3553(a), has been exacerbated by the “unplanned upward drift” of white-collar sentences over many years. See Frank O. Bowman III, *Pour Encourager Les Autres? The Curious History and Distressing Implications of the Criminal Provisions of the Sarbanes-Oxley Act and the Sentencing Guidelines Amendments That Followed*, 1 OHIO STATE J. CRIM. L. 373, 387 (2004). The loss guideline fails to measure a host of factors that may be important and serve as bases for mitigating punishment. See Allan Ellis et al., *At a Loss for Justice: Federal Sentencing for Economic Offenses*, 25 CRIM. JUST. 34, 37 (2011); see also *United States v. Ovid*, No. No. 09-CR-216 (JG), 2010 U.S. Dist. LEXIS 105390, at *4 (E.D.N.Y. Oct. 1, 2010) (“[T]he fraud guideline, despite its excessive complexity, still does not account for many of the myriad factors that are properly considered in fashioning just sentences, and indeed no workable guideline could ever do so.”).

Sentencing Commission data also reflect broad judicial discomfort with sentences under the “loss” guideline. In Fiscal 2022 (the most recent year available), for example, within-guideline sentences were imposed in just 42 percent of cases under § 2B1.1. See *U.S. Sent. Comm’n*

Quarterly Data Rpt. (2022), Table 10.⁷ Meanwhile, sentences reflecting a downward departure (non-cooperation) or variance comprised 43.8 percent of cases under that guideline. *See id.*

The Sentencing Commission Interactive Data Analyzer⁸ indicates that, for the last 5 fiscal years, nationwide, defendants in Criminal History Category I sentenced under § 2B1.1 received a sentence of “probation” or “probation and alternatives” 32.6 percent of the time.



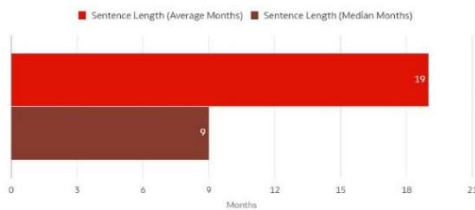
The same tool reveals an average term of imprisonment of 19 months and a median of 9 months for § 2B1.1 cases.⁹

⁷ Available at https://www.ussc.gov/sites/default/files/pdf/research-and-publications/federal-sentencing-statistics/quarterly-sentencing-updates/USSC-2022_Quarterly_Report_Final.pdf

⁸ See <https://ida.ussc.gov/analytics/saw.dll?Dashboard>

⁹ The prosecution provided no citation for its dubious assertion, Gov. Mem. at 15, that 96 percent of defendants sentenced under § 2B1.1 receive prison, with an average sentence of 36 months.

Average and Median Sentence Length
Fiscal Year 2017,2018,2019,2020,2021



The figure includes the 18,644 cases reported to the Commission. Cases missing information necessary to complete the analysis were excluded from this figure. Sentences of 470 months or greater (including life) and probation were included in the sentence average computations as 470 months and zero months, respectively. Sentences of probation only are included here as zero months. The information in this figure includes conditions of confinement as described in USSC §5C1.1.

FILTER:
Fiscal Year: 2017,2018,2019,2020,2021; Circuit: All; State: All; District: All; Race: All; Gender: All; Age: All; Citizenship: All; Education: All; Crime Type: All; Guideline: §2B1.1; Drug Type: All; Sentencing Zone: All; Criminal History: 1; Career Offender Status: All

C. The Sentences in Other Trade Secret Prosecutions under 18 U.S.C. § 1832 Support a Sentence of “Time Served” for Mr. Yu.

Based on information available to the Department of Justice, the prosecution compiled a list of all sentences for defendants indicted since 2018 and convicted of violating 18 U.S.C. § 1832 (or conspiracy to do so). *See* D.E. 369-1. Mr. Yu has created an annotated version of this chart that corrects certain errors (in red) (*e.g.*, one case was overturned on appeal and the prosecution overstated the amount of “time served” in another case) and adds material information to facilitate meaningful comparison: the loss amount, the amount of any fine imposed, and aggravating or distinguishing factors. *See* Exhibit A.¹⁰ Several conclusions emerge from this information, all of which support the imposition of a “time served” sentence.

First, federal “trade secret” prosecutions are *extremely* rare. In the five years from 2018 to present, the prosecution was able to identify only 18 individuals (17 excluding the vacated case) indicted, convicted, and sentenced under § 1832.¹¹ Nine of those 17 defendants (53%) appear to

¹⁰ The additional information comes from review of documents available on PACER, including the judgments and, where available, plea agreements, government sentencing memoranda, and/or sentencing hearing transcripts.

¹¹ Meanwhile, more than 69,000 individuals were sentenced by federal courts in Fiscal 2018, alone. *See* https://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-publications/2019/FY18_Overview_Federal_Criminal_Cases.pdf

have Asian surnames: Zhou, Chen, Lin, Sing, Kim, Lam, Lam, Xue, and Sui. Moreover, among these 17 individuals, several were charged as co-defendants in the same case and/or arising from the same investigation: Zhou and Chen; Raco, Rose, Lam, and Lam; Jasper and Jasper; Delia and Sernas. Thus, in substance, only 11 distinct investigations resulted in the 17 convictions over the last 5 years. This data is consistent with the statistics that Mr. Yu has presented, D.E. 56, and the empirical example of Tom Winslow, who stole ADI trade secrets and brought them to a major competitor without facing prosecution. It confirms employee misappropriation of intellectual property, including trade secrets, is typically handled in the civil legal system, most often by a simple “cease and desist” letter or sometimes by a civil lawsuit. Federal prosecution is extremely rare, and it disproportionately targets defendants of Asian ethnicity.

Second, *all* sentences exceeding 8 months involved actual or intended loss over \$500,000, and *all* sentences exceeding one year and one day involved loss of over \$1 million.

Third, a non-incarceration or “time served” sentence was imposed in 4 of 17 cases (24%).

Fourth, more than half of the cases (9 of 17 or 53%) involved aggravating factors that are absent here: separate counts of conviction for additional, non-trade secret offenses; actual economic espionage benefit to the PRC government/companies; or both.

Fifth, the largest fine amount in any case, imposed in 3 of the 17 cases (18%), was \$10,000. No fine was imposed in 7 of the 17 cases (41%).

Sixth, the case from this collection most analogous to Mr. Yu’s is *United States v. Yang Sui*, No. 20-cr-00109 (N.D.N.Y.). Sui, who had a Ph.D. in electrical engineering, was employed as a research engineer at General Electric’s Global Research Center from 2010-2018. *See Sui*, D.E. 3 (plea agreement) at 5. He performed work on semiconductors called MOSFETs, which are used in wind turbines, solar systems, medical imaging, and aviation. *See id.* Sui misappropriated GE

trade secrets while planning to start his own company whose purpose was to develop and sell the same type of MOSFETs that GE was researching, designing, and manufacturing. *See id.* at 7-8. Sui was looking for at least \$30 million of outside funding to help his startup begin operation. *See id.* at 8. The parties agreed that the intended loss was at least \$500,000. *See id.* at 12. The court imposed a sentence of one year probation and a \$5,000 fine.

D. Just Punishment Does Not Require Further Incarceration.

Additional incarceration in federal prison is unnecessary to adequately reflect the seriousness of the offense of conviction, to promote respect for the law, and to provide “just punishment” as required by § 3553(a)(2)(A). A federal felony conviction, supervised release, and financial consequences, are substantial punishment.

While it is easy to become inured to enormous custodial sentences in the federal system, a federal felony conviction is, itself, a severe penalty, particularly for a non-violent offense by an individual with no criminal history whatsoever. Mr. Yu has endured, and will continue to suffer, humiliation, stress, and financial devastation that he scarcely could have imagined before. Courts have recognized that myriad severe collateral consequences attach to a federal felony conviction, which can amount to a kind of “civil death.” *United States v. Nesbeth*, 188 F. Supp. 3d 179, 181 (E.D.N.Y. 2016) (lengthy opinion detailing collateral consequences of conviction in imposing non-incarceration sentence).

Probation supervision as part of a required term of supervised release is also meaningful punishment. The Supreme Court noted, in *Gall*, that probation supervision amounts to a “substantial restriction of freedom.” 552 U.S. at 595. As one judge of this district observed in one of the first sentencing hearings conducted after *Gall*:

[P]robation is not nothing, that there are substantial restrictions on an individual’s freedom in probation, that we can structure a probationary sentence that meets all the purposes of sentencing, and that is entirely appropriate. This was one of the

things that the guidelines ignored, and the guidelines dramatically changed from preguideline practice and which the Supreme Court is essentially saying we can now look at again.

United States v. Ramos, 04-CR-10275 (D. Mass. 2008) (D.E. 62) (ordering probationary sentence for substantial oxycontin trafficking). The district court's observations at sentencing in *United States v. Prosperi*, 686 F.3d 32 (1st Cir. 2012), also deserve attention:

I think it is very difficult at times, for those of us who are judges or prosecutors or lawyers, to put ourselves in the shoes of a person with no prior experience with the criminal justice system who finds himself or herself accused of a crime. I do not think, sometimes, we fully recognize the anguish and the penalty and the burden that persons face when called to account, as these men are, for the wrong they have committed.

Id. at 343-44 (upholding sentence of probation with six months' home confinement and 1,000 hours of community service where district court calculated the GSR as 87-108 months after conviction on over one hundred felony counts of false statements and fraud related to "Big Dig").

Notably, the Guidelines have been criticized for generating ranges that always include incarceration and failing to include criteria to make an "in / out" determinations.¹² *Post-Booker*,

¹² The Sentencing Reform Act called for courts to consider probationary penalties as a distinct type of sentence with independent value, not merely a "lenient" option to be used only in extraordinary cases. Congress directed the Sentencing Commission to "promulgate . . . guidelines . . . for use of a sentencing court in determining the sentence to be imposed in a criminal case, including . . . a determination whether to impose a sentence to probation, a fine, or a term of imprisonment." 28 U.S.C. § 994(a)(1)(A) (emphasis added). Congress further directed sentencing judges, "in determining whether to impose a term of imprisonment," to "consider the factors set forth in section 3553(a)." 18 U.S.C. § 3582(a) (emphasis added). Thus, Congress intended the courts to first determine whether to imprison, considering probation as one of the "kinds of sentences available." 18 U.S.C. § 3553(a). The Guidelines offer no option that does not include a term of imprisonment; no combination of offense level and criminal history category excludes the possibility of imprisonment. By contrast, the (now advisory) sentencing table excludes probation as an option in many cases. As a result, the percentage of federal defendants sentenced to a purely probationary sentence declined from approximately 48% in 1984 to 6.2% by 2007. U.S. Sentencing Commission, 2 *The Federal Sentencing Guidelines: A Report on the Operation of the Guidelines System and Short-Term Impacts on Disparity in Sentencing*, Use of Incarceration, and

the Court is now directed to consider all of “the kinds of sentences available” by statute, 18 U.S.C. § 3553(a)(3), even if the “kinds of sentence . . . established [by] the guidelines” zones recommend only a prison term. *See Gall*, 552 U.S. at 59 & n.11. Congress directed the Commission to “insure that the guidelines reflect the general appropriateness of imposing a sentence other than imprisonment in cases in which the defendant is a first offender who has not been convicted of a crime of violence or an otherwise serious offense,” and the “general appropriateness of imposing a term of imprisonment on a person convicted of a crime of violence that results in serious bodily injury.” 28 U.S.C. § 994(j). Congress issued this directive, because “sentencing decisions should be designed to ensure that prison resources are, first and foremost, reserved for those violent and serious criminal offenders who pose the most dangerous threat to society,” and “in cases of nonviolent and nonserious offenders, the interests of society as a whole as well as individual victims of crime can continue to be served through the imposition of alternative sentences, such as restitution and community service.” Pub. L. No. 98-473, § 239, 98 Stat. 1987, 2039 (1984) (set forth at 18 U.S.C. § 3551 note). Mr. Yu is plainly not a “violent and serious offender” who “pose[s] the most dangerous threat to society.”

E. Neither Specific nor General Deterrence Requires Additional Incarceration.

Additional imprisonment is not necessary to protect the public or to deter Mr. Yu from similar crimes in the future, as required by § 3553(a)(2)(B) and (C). Mr. Yu has no prior criminal history, and he will never work in MMIC chip design again.

Prosecutorial Discretion and Plea Bargaining 376 fig. 14 (1991); U.S. Sentencing Commission, 2007 *Sourcebook to Federal Sentencing Statistics* 27 fig. D. (2007). Rather than providing courts with a range of prison and non-prison alternatives as Congress had intended, the Commission instead inexplicably dismissed probation as a “very lenient” punishment that rarely would be used, with predictable and unfortunate results evident in the United States’ escalating incarceration rate.

The very fact of federal prosecution will also serve the interest in general deterrence. Nobody looking at what Mr. Yu has experienced, the pain inflicted on his family, and the obstacles he will face in the future could mistakenly conclude that his crime was anything other than extremely serious or that they should engage in similar conduct. To the extent the government contends that the Court must “send a message” given the “importance of trade secrets as intellectual property,” Gov. Mem. at 1, that “message” is broadcast loud and clear by this rare criminal prosecution and conviction.

Moreover, there are no data to suggest that a longer sentence would have any marginally greater general deterrent effect. Indeed, research consistently has shown that “increases in the severity of punishments do not yield significant (if any) marginal deterrent effects.” Michael Tonry, *Purposes and Functions of Sentencing*, 34 CRIME & JUST. 1, 28 (2006). “Three National Academy of Science panels . . . reached that conclusion, as has every major survey of the evidence.” *Id.*; see also Zvi D. Gabbay, *Exploring the Limits of the Restorative Justice Paradigm*, 8 CARDOZO J. CONFLICT RESOL. 421, 447-48 (2007) (“[C]ertainty of punishment is empirically known to be a far better deterrent than its severity.”). Empirical research regarding white-collar offenders in particular (presumably, the most rational of potential offenders) found *no difference* in the deterrent effect of probation and that of imprisonment. See David Weisburd et al., *Specific Deterrence in a Sample of Offenders Convicted of White Collar Crimes*, 33 CRIMINOLOGY 587 (1995); see also Gabbay, *supra*, at 448-49 (“[T]here is no decisive evidence to support the conclusion that harsh sentences actually have a general and specific deterrent effect on potential white-collar offenders.”). On the other hand, a substantial body of research establishes that “crime-reducing aspects of imprisonment are considerably negated by crime-enhancing ones.” Todd

Clear, *Backfire: When Incarceration Increases Crime, The Unintended Consequences of Incarceration* (Vera Inst. 1996).

F. Imprisonment Would Not Facilitate Any Required “Treatment.”

Mr. Yu does not require “treatment” of the sort that a Bureau of Prisons placement would uniquely facilitate under § 3553(a)(2)(D). This factor, then, counsels against any prison sentence. Indeed, non-incarcerative sentences “divert offenders from the criminogenic effects of imprisonment which include contact with more serious offenders, disruption of legal employment, and weakening of family ties.” U.S. Sent. Comm’n, Staff Discussion Paper, *Sentencing Options Under the Guidelines* 19 (Nov. 1996).

G. Any Fine Should Not Exceed \$5,000.

The prosecution argues that Mr. Yu should be required to pay a fine of \$235,000, “approximately the gross income of his fraudulent business.” Gov. Mem. at 2. Such a fine would plainly be excessive.

First, as noted above, the largest fine in *any* trade secret case the prosecution has identified in the last five years—including cases with multimillion-dollar losses—was \$10,000. A fine more than twenty times that size would create vast unwarranted disparity.

Second, a fine of that scale would, in effect, unfairly punish Mr. Yu in this criminal case for acquitted conduct. His gross sales of the TM5051 and TM5052 (similar to the HMC1022A), the only count of conviction, were just \$12,437. *See* Ex. 389A. And, of course, those gross sales do not account for the substantial expenses he incurred to have Win manufacture the chips.

Third, Mr. Yu has incurred substantial expense in defending against acquitted counts and the baseless, abandoned case against his wife, Ms. Chen, for which he has no realistic remedy.

Fourth, Mr. Yu faces potential broader civil liability to ADI from its civil lawsuit.

Fifth, Mr. Yu is not as wealthy as the prosecution suggests. He owes \$500,000 to his in-laws (Ms. Chen’s parents) which they provided toward purchase of the family home in Lexington. *See* PSR ¶ 76. Nearly \$400,000 of the amount listed in “bank accounts” is in a retirement account that cannot be liquidated without incurring substantial penalties and tax liabilities.

For all of those reasons, a fine no greater than \$5,000 would be more appropriate and commensurate with the fines in similar cases.

H. The Prosecution (and ADI) Have Waived Restitution.

More than *one year* after the verdict, *eight months* after the first-scheduled sentencing date,¹³ and *six months* after the Court commenced a multi-day evidentiary hearing on “loss,” at which ADI counsel and personnel were active participants, the prosecution has now advised for the first time in its Sentencing Memorandum that ADI wishes to seek restitution for its legal fees and expenses. Gov. Mem. at 16-19. The Court should deny any such future request as untimely and waived.

In relevant part, the MVRA provides:

Upon the request of the probation officer, but *not later than 60 days prior to the date initially set for sentencing*, the attorney for the Government, after consulting, to the extent practicable, with all identified victims, shall promptly provide the probation officer with a listing of the amounts subject to restitution.

18 U.S.C. § 3664(d)(1) (emphasis added). The prosecution did not do so. The MVRA further provides:

If the victim’s losses are not ascertainable by the date that is 10 days prior to sentencing, the attorney for the Government or the probation officer shall so inform the court, and the court shall set a date for the final determination of the victim’s losses, not to exceed 90 days after sentencing. If the victim subsequently discovers further losses, the victim shall have 60 days after discovery of those losses in which to petition the court for an amended restitution order. Such order may be granted only upon a showing of good cause for the failure to include such losses in the

¹³ The “date initially set for sentencing” was September 15, 2022. *See* D.E. 261

initial claim for restitutionary relief.

Id. § 3664(d)(5) (emphasis added). There is no plausible basis to assert that ADI’s “losses” in the form of legal fees and expenses were “not ascertainable” at least 10 days before the sentencing hearing. Accordingly, any restitution claim is untimely and waived.¹⁴

In the event the Court nevertheless intends to consider such a request, Mr. Yu should receive adequate notice, relevant discovery, and an opportunity to question a knowledgeable witness from ADI and/or its outside counsel under oath. In *In re Akebia Therapeutics, Inc.*, 981 F.3d 32 (1st Cir. 2020), cited by the prosecution (Gov. Mem. at 17), the First Circuit affirmed a district court order that, after a contested hearing, had *rejected* nearly half of a request for restitution for legal fees and expenses paid to Ropes & Gray LLP as “neither reasonable nor foreseeable under the MVRA.” *Id.* at 35. The Court emphasized that “the MVRA ‘does not cover the costs of a private investigation that the victim chooses on its own to conduct.’” *Id.* at 36 (quoting *United States v. Lagos*, 138 S. Ct. 1684, 1687 (2018)). “The district court clearly picked up the [Supreme] Court’s emphasis on the word ‘necessary’ and properly considered which of [the victim’s] claimed expenses were integral to its participation in the government’s investigation and prosecution of the offenses in the criminal proceedings.” *Id.* at 37. Further complicating matters here, as part of the “case-by-case” inquiry required under *Akeiba Therapeutics*, this Court would need to eliminate expenses related to acquitted counts. The time for any such fine-grained inquiry has long passed.

¹⁴ *United States v. Dolan*, 560 U.S. 605 (2010), is not to the contrary. The Supreme Court held that the district court’s failure to schedule a restitution hearing within 90 days did not deprive it of authority to order restitution. *See id.* at 611. “In *Dolan*, however, the issue was *not* whether one of the *parties* had waived a claim but rather what consequences resulted from the *court’s* untimely scheduling of a mandatory hearing.” *United States v. DeCicco*, 439 F. Supp. 3d 1, 4 (D. Mass. 2020) (emphasis added).

CONCLUSION

For the foregoing reasons, the Court should impose the proposed sentence of “time served” followed by one year of supervised release, a fine no greater than \$5,000, and the \$100 special assessment. The Court should find that any request for restitution is untimely and has been waived.

Respectfully submitted,

HAOYANG YU

By his attorneys,

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CERTIFICATE OF SERVICE

I hereby certify that this document filed through the ECF system will be sent electronically to the registered participants as identified on the Notice of Electronic Filing (NEF) and paper copies will be sent to those indicated as non-registered participants on May 30, 2023.

/s/ William W. Fick